August 8, 2003

VIA ELECTRONIC FILING

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: *In re Implementation of Section 304 of the Telecommunications Act of 1996; Commercial Availability of Navigation Devices*, CS Docket No. 97-80;
In re Compatibility Between Cable Systems and Consumer Electronics Equipment, PP Docket No. 00-67
Ex Parte Communication

Dear Ms. Dortch:

Microsoft Corporation (Microsoft) and Hewlett-Packard Corporation (HP) commend the cable and consumer electronics industries for their recent efforts to set aside long-held differences and develop rules and standards that will enable the deployment of innovative, entertaining and user-friendly digital cable products and services to consumers. However, we are concerned that the "Plug-and-Play" proposal arising from these efforts[1] contains provisions that, perhaps unintentionally, could frustrate consumers' enjoyment of an entire category of highly (and increasingly) valued consumer products (*i.e.*, personal computers (PCs) and other IT devices and related networking technologies) that are natural participants in the nascent market for Digital Cable Ready devices.[2] Omitting PCs and other new consumer devices from the Digital Cable Ready market, even unintentionally, would limit consumer choice and likely stifle innovation and investment. To avoid this unfortunate and undesired result, we ask the Commission to modify certain elements of the *Plug-and-Play Proposal*, as described herein, to ensure that consumers will have many more device options, with different price points and functionality. These modifications can be made while actually improving the security of content delivered over cable.

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[1] *See* Ex Parte Letter and Memorandum of Understanding (with attachments) filed by major cable system operators and consumer electronics manufacturers, CS Docket No. 97-80, PP Docket No. 00-67 (Dec.19, 2002) ("*Plug-and-Play Proposal*").

[2] According to the NCTA/CEA Joint Status Report on the bi-directional plug-and-play negotiations, the parties have settled on "Digital Cable Ready" as the marketing name for the unidirectional digital cable products covered by the *Plug-and-Play Proposal*. Joint Status Report of the Consumer Electronics Association (CEA) and the National Cable & Telecommunications Association (NCTA), CS Docket No. 97-80, PP Docket No. 00-67, at 2 (July 24, 2003).

INTRODUCTION AND SUMMARY

The transition to digital media is fully under way. HDTV sales are up, cable operators are beginning to carry both broadcast and cable HD programming, and consumers are eagerly adopting digital devices that utilize a diverse array of innovative technologies (including WiFi, Bluetooth, USB, and Internet Protocol) to enable home networking and otherwise help to optimize the digital media experience in the home. The *Plug-and-Play Proposal*, while attempting to advance the digital transition, in fact could undermine many of the gains that have been made by too narrowly defining the set of approved technologies and thus potentially frustrating consumers' enjoyment of some of the most promising digital technologies that could access high-value digital content directly over cable.

This *ex parte* communication outlines changes that we ask the Commission to consider and incorporate into the proposed Plug-and-Play regulations to ensure that PCs and other IT devices and networking technologies can participate in the emerging market for Digital Cable Ready products. We also recommend changes to the related DFAST License Agreement that will need to be signed by anyone seeking to manufacture a Digital Cable Ready device. Specifically, the regulations and License Agreement should be modified to accommodate more general-purpose product architectures, such as PCs, and a range of networking and content protection technologies now in common use across the Internet and within other networks. As described below, these technologies can be accommodated without undermining the security of digital content delivered over cable because the technologies themselves employ sophisticated, flexible security techniques. These techniques enable the secure flow of copyrighted content through and across a diverse array of devices and connections.

This *ex parte* filing also asks the Commission to assure the creation of a transparent and independent process for certifying new Digital Cable Ready technologies and innovations in the future. Such a process is required to sustain and further support the transition to digital technologies that consumers are increasingly demanding.

THE PLUG-AND-PLAY RULES SHOULD ACCOMMODATE PERSONAL COMPUTERS AS FULLY-FUNCTIONAL ENTERTAINMENT DEVICES

Recent surveys and experience show that consumers increasingly view their PCs as an essential part of the home entertainment experience. According to a Harris Interactive Survey conducted in March 2003 for Microsoft, sixty-three percent (63%) of survey respondents currently use a PC in a group living area (*e.g.*, living room, den, kitchen). Survey respondents 13 and older said they consider PCs more important for home entertainment than a CD player, stereo or DVD player. A recent eMarketer article described a July 2003 InsightExpress survey showing that over half (57%) of PC owners surveyed said they intended to have all of their

photos in digital format over the next year.[3] Thirty-three percent (33%) of respondents said they wanted to spend more time managing and editing digital pictures on their PCs while thirty-two percent (32%) would like to spend more time burning CDs.[4]

The Harris Interactive Survey showed that young people in particular have embraced the PC as a source of entertainment. About seventy-five percent (75%) of teens (13 to 17 years old) indicated that they listen to music while using their computers. Forty-one percent (41%) of teens said that they listen to music exclusively on computers, while thirty-five percent (35%) said they use a PC as often as a stereo or portable music player. Sixty-five percent (65%) of teens ranked the PC a more important entertainment device than the VCR, and fifty-seven percent (57%) said that editing digital photos is an important use of the PC. Such widespread consumer adoption and excitement about the use of the PC as a source of entertainment creates strong opportunities for the cable industry as it looks for new revenue streams. The installed base of PCs in homes in the United States is now in the high tens of millions; such an audience adds tremendous potential reach to the cable industry's digital services, increasing the importance of including applicable PCs in the criteria for Digital Cable Ready devices.

Building on the growing popularity of the PC as an entertainment device, PC manufacturers recently released the Media Center PC, powered by the Microsoft Windows XP Media Center Edition operating system. Media Center PCs are specially designed to serve as both a computer and a hub of home entertainment. They come with mid- to high-end processors, plentiful memory, high-capacity hard disks, CD-ROM/DVD drives, advanced graphic and audio capabilities, networking connectivity, and a single remote control used to access the full range of entertainment resources, including digital videos and photos, DVDs, and downloaded movies and music. Media Center PCs can be connected to the Internet, a television, a cable network through a set-top box and/or to a home network used to share printers, devices, files and Internet connectivity among all the computers in a home. The Media Center PC offers consumers an exciting new entertainment experience, one that would be even richer if the device could include a point-of-deployment (POD/CableCARD) module and receive video programming directly from a cable network without an intervening and costly set-top box.

In fact, because of the low cost of memory, hard disk storage space and processing power, many consumer electronics (CE) manufacturers are now developing television products, such as Personal Video Recorders (PVRs) and other devices, that have open product architectures similar to PCs. These new products are enhancing competition and improving consumers' entertainment experience by doing much more than simply tuning TV channels.

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[3] "What Users Want From PCs," *eMarketer*, July 30, 2003, available at http://www.emarketer.com/news/article.php?1002376 (last visited Aug. 8, 2003).

[4] *Id.*

As submitted, however, the *Plug-and-Play Proposal*, with the well-intentioned goal of gaining quick agreement, has, in our view, narrowed the specification in a way that could undermine these and other IT innovations by (1) excluding PCs and other IT devices from the first generation of "Digital Cable Ready" equipment available to consumers for connection directly to cable systems and (2) constraining the network connectivity of digital content received via cable to a single type of wired network connection (IEEE 1394). The effect of these limitations will be to retard the development of the very kinds of technological innovations that are driving consumer participation in the transition to digital television. The success of the DTV transition ultimately will depend on the availability of a diversity of digital devices and technologies that, together with the availability of high-value digital content, enhance the consumer's entire home entertainment experience. But the technologies that are exciting consumers today – WiFi (802.11x), Bluetooth, USB, Internet Protocol, and PCs that create and manage home networks allowing consumers to optimize the digital entertainment experience – all seem to be left out of the *Plug-and-Play Proposal.*

Confining the *Plug-and-Play Proposal* to a very limited group of devices and networking protocol – ostensibly (but unnecessarily) to ensure the security of high-value digital content – takes away the other essential element – technological innovation – on which the success of the DTV transition depends. That element of the transition need not and cannot wait until the industries have settled on a "bi-directional" plug-and-play standard. The digital transition should not be subject to further delay. Moreover, in today's rapidly-evolving marketplace, consumers could lose the opportunity to take advantage of these new technologies if consumer choice is limited in the near term to the technologies called out by the current *Plug-and-Play Proposal.*

Both NCTA and CEA have stated that the negotiators did not intend to exclude PCs categorically from the *Plug-and-Play Proposal.* According to NCTA, the limitation to "unidirectional" devices "was designed to accommodate devices that did not require resolution of the bi-directional issues now being addressed by the MSO and CE negotiators. . . . Thus, the proposal does *not* prohibit compliant TVs or other devices with a cable modem in the housing. Nor does the proposal prohibit a PC with a POD slot and Internet connectivity – provided that the PC meets the compliance and robustness rules."[5] Similarly, CEA stated that the DFAST License Agreement was not intended to exclude PCs and other cable modem-equipped devices: "The parties understood that the term 'Unidirectional' is meant to exclude only the use of the return path to the cable headend for the purpose of specific signaling in the context of cable television and ancillary services. It is *not* meant to exclude, *e.g.*, incorporation of a modem for

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[5] Reply Comments of the National Cable & Telecommunications Association (NCTA), CS Docket No. 97-80, PP Docket No. 00-67, at 30-31 (Apr. 28, 2003) (emphasis in original) (*NCTA Reply Comments*).

access to the Internet via broadband connectivity provided by cable modem service, DSL, or other services."[6]

Despite NCTA's and CEA's stated intentions, however, the *Plug-and-Play Proposal* in fact contains a number of elements that, if allowed to remain, could have the net effect of excluding PCs and PC-related technologies from participating in the market for unidirectional digital cable devices. To promote investment and innovation and avoid pre-selecting the technologies that will succeed in the digital age, we ask the Commission to remedy this oversight by modifying the *Plug-and-Play Proposal* in the following respects:

- Revise the proposed regulations to ensure that PCs and other open-architecture consumer IT devices are not foreclosed (by definition or otherwise) from being developed and marketed as Digital Cable Ready devices; and

- Ensure that the compliance and robustness rules in the DFAST License (which is required to deploy the POD/CableCARD needed to receive encrypted digital cable programming) allow for diverse and flexible network connections and content protection techniques, including digital rights management (DRM) technologies that protect content wherever it travels by embedding and associating the appropriate usage rights policy with the content, independent of the underlying network technologies through which it may pass.

As noted above, these modifications will promote investment and innovation and help to ensure that consumers are able to embrace fully the technologies that hold the greatest potential to drive the transition to digital television.

PERSONAL COMPUTERS CAN PROTECT THE SECURITY OF DIGITAL CONTENT DELIVERED OVER CABLE

Although the *Plug-and-Play Proposal* was not intended to exclude PCs *per se*, the NCTA reply comments appear to acknowledge that the compliance and robustness rules required of devices deploying PODs likely would have the effect of excluding many PCs, apparently for security reasons: "[A POD-equipped] PC cannot have insecure interfaces or internal access points. Virtually every PC has a user accessible bus, which by its very nature is insecure. . . . [I]f [the presence of an internal bus is not to disqualify PCs as Digital Cable Ready devices], it must be demonstrated how an unencrypted bus can be made robust and tamper proof."[7] This

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[6] Consumer Electronics Industry Reply Comments, CS Docket No. 97-80, PP Docket No. 00-67, at 7 (Apr. 28, 2003) (emphasis in original) (*CE Reply Comments*).

[7] *NCTA Reply Comments* at 31.

comment suggests an overemphasis on *where* and *how* content is distributed rather than on the paramount goal of protecting the security of *content* itself. It is true that PCs have an open internal architecture through which content and unrelated data must be able to move freely. But that architecture alone does not render PCs *per se* unable to protect the security of content. Indeed, the PC industry has developed technologies – which have proven effective in the marketplace – that protect the security of copyrighted *content*, regardless of and independent of the connections (internal and external) or networks over which the content is distributed. If the *Plug-and-Play Proposal* is to include PCs and other open-architecture technologies, its terms should be modified to acknowledge alternate methods of content protection and allow acceptance of these dynamic content protection technologies.

Digital Rights Management

Digital rights management technologies protect the security of content by subjecting the content to robust encryption algorithms and then ensuring that the content, wherever it may go, cannot be decrypted without the appropriate authorization, consistent with the usage rights policy established, defined and published by the content owner. Thus, content subject to DRM can be copied and flow freely between and through any number of devices using a diversity of outputs and inputs (including Internet Protocol, IEEE 1394, UPnP and 802.11x (WiFi)), regardless of the type of connection, and still remain protected because the content itself cannot be accessed or used unless the device or entity holding the content has the appropriate digital certification or authorization. DRM content protection systems have been widely adopted in the IT environment; a wide variety of content producers have introduced new IP-based Internet services that allow downloading of movies, music and other high-value content protected by DRM technologies.[8]

The basic functional requirements of a secure and effective DRM system are fairly straightforward. These functional requirements, set forth below, should serve as the basis for certifying PCs and related devices and technologies for interoperation with digital cable systems. An effective DRM-based content protection system that ensures that protected content can be used only in accordance with the usage rights policy established by the content owner or provider should satisfy the following basic functional requirements:

- Consistent consumer experience: Consumers already enjoy content from a variety of sources (*e.g.*, cable, satellite, DSL, Internet) on a variety of devices (*e.g.*, set-top boxes, terrestrial receivers, personal video recorders, personal computers, DVD players, CD players). Most copyrighted content on these platforms is already

[8] For example, Movielink™ allows consumers to "rent movies by downloading" at http://www.movielink.com. CinemaNow also allows PC users to "watch over 1,000 movies on demand here," at http://www.cinemanow.com.

managed by conditional access systems or digital rights management systems. Content protection methods should not create consumer confusion with respect to what type of content can be accessed and used, from what source, on what type of device or network.

- Security: A content protection method should protect copyrighted information when it is transmitted among a variety of consumer devices, including but not limited to single and multi-function devices such as set-top boxes and personal video recorders as well as general purpose devices such as PCs. The content protection method is responsible for enforcing the usage rights policy set forth by the content provider. The content protection method should be difficult for consumers to circumvent using common means. Peer reviewed and published encryption approaches, including public algorithms such as DES, 3-DES, and AES, should be used.

  - Simplicity: It should be relatively simple to implement the encryption algorithm. For example, implementing the encryption algorithm in hardware at either the transmitter or receiver should require 10% or less of the digital logic necessary to implement the appropriate network protocol; implementing the encryption algorithm in software at the transmitter or receiver should require 3% or less of the processing power required to produce a baseband video digital stream from a compressed digital stream; it should be relatively simple to implement the authentication method in any device or software; and implementing the authentication method in a PC should not require the addition of special purpose hardware dedicated solely to this purpose.

  - Strength: The encryption algorithm should be robust in that circumvention of the algorithm should be difficult for consumers using common means. If possible, the encryption algorithm should be such that detailed knowledge of a given implementation of the algorithm should not, in and of itself, be sufficient to enable the production of circumvention devices. In cases of circumvention, it should be possible to renew methods of protection; where a device is compromised, its future participation in receiving protected content should be revocable.

- Rights Expression: The usage rights policy expressed for a copyrighted work, as determined by the copyright holder, should be defined with a rights expression language (REL) such as XrML. It is essential that the REL be flexible so as to address the wide – and ever-changing – variety of scenarios under which consumers access protected content. In addition, the REL should be defined in an industry

standard, such as MPEG-21 Part 5,[9] that can serve as the foundation for interoperability between various content protection methods.

- Authentication: It must be possible to implement the authentication method in either hardware, software, or some combination. The authentication method for devices must operate so that any device participating in the exchange of protected content can determine authenticity to evaluate usage rights and access content.

- Interoperability: Any content protection method should be interoperable with other such methods as to enable policy/rights to be honored and content to be protected if it should move from one content protection system to another. In particular, it should be possible to communicate the consumer's license (*e.g.*, copy control) information from one content protection system to another.

- Upgradeability: The ability to upgrade content protection systems is necessary as both security measures, licensing models and consumer usage evolve over time. It should be technologically possible to upgrade the system in a relatively easy manner. Usually, a system upgrade will involve a change in the head-end or server and/or a change in the client through a software download. The impact on the consumer should be minimal.

- Renewability: An ability to renew a DRM system or part of a system is necessary to address security compromises that can occur. This operation, which typically has an impact on the consumer, may include replacing a smart card in a conditional access system or making hardware or software changes in a consumer device.

- Revocation: It should be technologically possible to revoke the ability of a device to receive protected content if the device is compromised. The usage of a particular piece of protected content should be revocable if the content becomes compromised. (Governed by appropriate rules, procedures, and safeguards.)

- Performance: The implementation of a content protection method should not compromise the performance of the affected devices; *i.e.*, a device implementing a content protection method should not behave perceptibly differently, from a consumer perspective, from an identical device not implementing the content protection method.

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[9] Available at http://www.chiariglione.org/mpeg/standards/mpeg-21/mpeg-21.htm (last visited Aug. 8, 2003).

- Resistance to obsolescence: Implementing an encryption algorithm in a device should not hasten the pace at which the device becomes obsolete in the market; *i.e.*, products implementing the encryption algorithm should not become obsolete between the time they are introduced in the market and the time they might otherwise become obsolete due to market influences not related to content protection.

A content protection system incorporating these functional requirements enforces the security of protected content through the administration of the licenses that authorize, in accordance with prescribed usage rights, the decryption, viewing and distribution of content that can be copied but remains encrypted. As noted above, this approach to content protection is widely (and increasingly) employed in the distribution of content over the Internet. In addition to protecting copyrighted content, it offers great flexibility because it can be applied no matter how content is distributed – over a variety of wired connections or via wireless distribution (including WiFi and over-the-air broadcasting). To the contrary, the *Plug-and-Play Proposal* currently limits the network distribution of protected content to a single type of wired network connection.

Given the security and flexibility offered by DRM-based content protection methods, we ask the Commission to clarify that devices employing DRM and other content protection technologies exhibiting the functional elements described herein can satisfy the requirements to be certified as "Digital Cable Ready" devices.

Neutral, Transparent Certification Procedures

To ensure that PCs and other IT devices employing DRM or other effective content protection technologies are given fair consideration as Digital Cable Ready devices, the Commission should take steps to ensure that the procedures for testing and certifying devices as compliant with applicable standards are fair and administered by a neutral, independent arbiter who has no interest in the proceedings. The testing and certification procedures set forth in the *Plug-and-Play Proposal* fall short because they place CableLabs in the difficult position of certifying products from a wide range of other industries. Although CableLabs can and does perform important functions for the promotion of the cable industry, consumers cannot be expected to rely on one industry to certify competing products across a range of industries. Consumers have long trusted independent entities, as referenced below, to serve this function. CableLabs should not be expected to take on a new cross-industry standards-certification role beyond its current role of promoting its patron industry.[10]

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[10] By way of illustration, the underlying purpose of CableLabs' CableModem certification program is not the consumer-oriented goal of promoting a vibrant, competitive market for cable modems, but the cable-oriented goal of developing specifications that will "enable compatible products to be sourced from multiple vendors in a timely fashion, thereby, unlocking the revenue

(continued...)

Consumers will expect the certification process for Digital Cable Ready devices to conform to the certification procedures used for other industries and devices regulated by the Commission, including Part 68 devices and Part 15 devices. Accordingly, manufacturers should generally be permitted to self-certify that their products comply with applicable standards.[11] To the extent that outside testing is required, it should be performed by an independent certification body.[12] Specifically:

- Interested parties should have an opportunity to participate in developing the Test Suite to be used to determine whether a device meets the applicable technical standards to be labeled Digital Cable Ready. Accordingly, the regulations should require that the Test Suite proposed by CableLabs and CEA be submitted to the Commission for review and approval, after all interested parties have had an opportunity to comment.

- Testing should be limited to qualified third-party facilities, as determined by the Commission. The rules should permit a manufacturer to submit a device to any third-party testing facility or certification body accredited by the Commission or ANSI. CableLabs should serve as a testing facility only if it satisfies the same requirements as other accredited testing facilities.

- The regulations should clarify that CableLabs does not approve or accept Self-Certification Documentation and cannot reject a manufacturer's Self-Certification Documentation. Challenges to a device's technical qualifications to be marketed as Digital Cable Ready should be brought as a complaint to the Commission. Absent an order from the Commission, CableLabs should not be allowed to withhold POD technology secrets or keys pending resolution of such a complaint.

These changes are included in the attached Appendix A, which sets forth the modifications to the technical regulations proposed herein.

(continued...)
potential of the [high-speed cable Internet] service." Cable Modem/DOCSIS® FAQ, available at http://www.cablemodem.com/faq/ (last visited Aug. 5, 2003).

[11] *See, e.g.*, 47 C.F.R. §§ 2.902, 2.906; § 68.324 (2002).

[12] *See, e.g.*, 47 C.F.R. §§ 2.960, 2.962 (2002).

IMPORTANT CHANGES MUST BE MADE TO THE PROPOSED REGULATIONS AND THE DFAST LICENSE AGREEMENT TO COVER PERSONAL COMPUTERS

This section describes the specific modifications to the proposed technical regulations and encoding rules that should be considered in order to ensure that PCs are eligible for certification as Digital Cable Ready devices and are not excluded from eligibility either by definition or because of architectural differences between PCs and other digital cable products.

Proposed Regulations

A definition of Unidirectional Digital Cable Products should be added to the recommended regulations to ensure compatibility between digital cable systems and unidirectional digital cable products to make clear that PCs are not categorically excluded from the definition of "unidirectional" digital cable devices simply because they include some two-way capabilities via Internet connectivity (through a cable modem or otherwise). The technical rules also should be modified to accommodate certain unique characteristics of PCs that were not acknowledged during the *Plug-and-Play* negotiations. Specific changes to the proposed regulations are set forth in the attached Appendix A.

The proposed Encoding Rules also should be modified to accommodate digital rights management technologies that are relied upon to protect copyrighted content from unauthorized display or distribution on hundreds of millions of PCs today. DRM technologies can operate within the limited encoding categories set forth in the Encoding Rules, but they also have the capability of accommodating a more diverse array of encoded restrictions, such as limitations on the time a program (or copy thereof) can be viewed or authorization to burn content to a CD or to transfer and play content on a portable device.[13] The rules should allow these types of codes (or rights) to be deployed for Undefined Business Models, and for Defined Business Models as long as the DRM rights are no more restrictive than the encoding allowed under the rules. The specific proposed changes are set forth in the attached Appendix B.

DFAST License Agreement

As the signatories note in their reply comments on the *Plug-and-Play Proposal*, only the proposed technical regulations and encoding rules have been submitted for FCC approval.[14] The MOU itself and the DFAST License Agreement are private commercial agreements. However, the Commission concluded in its September 18, 2000 *Declaratory Ruling* in the *Navigation*

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[13] Attached as Appendix C is a sample list of some of the usage rights that can be "encoded" in licenses authorizing use of content protected by DRM.

[14] *See, e.g., NCTA Reply Comments* at 28.; *CE Reply Comments* at 16-17.

Devices proceeding that the terms of the POD license (*i.e.*, the DFAST License Agreement) are subject to Commission oversight to ensure that they do not run afoul of the *Navigation Devices* rules requiring that security features be separated from navigation devices and prohibiting cable operators from using contracts or intellectual property rights to preclude the retail availability of navigation devices that do not perform conditional access or security functions. *See* 47 C.F.R. §§ 76.1202, 76.1204 (2002). In the *Declaratory Ruling*, the Commission acknowledged that the *Navigation Devices* rules attempt to strike a balance between the competing goals of "(1) . . . assur[ing] the commercial availability of navigation devices; and (2) . . . adequately safeguard[ing] the cable operators' signal security."[15] Keeping these two goals in mind, the Commission concluded that "[s]ome measure of anti-copying encryption is, we believe, consistent with the intent of the rules, notwithstanding that the rules would otherwise require that all conditional access controls take place in the security control module."[16] However, the Commission made clear that cable operators' ability to include copy protection provisions in the license accompanying the security control module (POD) was not unlimited: "we do not intend this declaratory ruling to signal that any terms or technology associated with such licenses and designated as necessary for copy protection purposes are consistent with our rules."[17] The Commission invited interested parties to submit concerns about the scope of copy protection rules in "finalized licenses that implicate our navigation devices rules" to the Commission.[18]

Although the DFAST License Agreement is theoretically not yet "finalized" because, as a commercial contract, it can always be changed by the parties, the DFAST License Agreement submitted with the *Plug-and-Play Proposal* was presented as a "model" and is sufficiently final to justify raising concerns about the License Agreement in this proceeding. In particular, we believe that the content protection provisions in the proposed DFAST License Agreement, which exceed the "allowable limits" contemplated by the Commission in the *Declaratory Ruling* because they actually undermine the statutory goal of promoting the commercial availability of navigation devices. More specifically, the Compliance and Robustness rules included in the proposed DFAST License Agreement exceed the boundaries set in the *Declaratory Ruling* because, by defining acceptable copy protection techniques to exclude network technologies and DRM-based content protection technologies that would not undermine cable content and system security, they both (1) are more restrictive than necessary to protect cable system security and (2) have the effect of depriving consumers of access to a category of potentially competitive

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[15] *In re Implementation of Section 304 of the Telecommunications Act of 1996; Commercial Availability of Navigation Devices*, Further Notice of Proposed Rulemaking and Declaratory Ruling, CS Docket No. 97-80, 15 FCC Rcd 18199, 18210-11 (2000).

[16] *Id.*

[17] *Id.* at 18211.

[18] *Id.*

navigation devices (*i.e.*, cable-enabled PCs). Accordingly, the Commission should urge CableLabs and the other stakeholders to modify the DFAST License Agreement so that the compliance and robustness rules accommodate DRM technologies and PC architectures.

The Commission should not approve the Digital Cable Ready standard and regulations of which the DFAST license is an essential component (because Digital Cable Ready devices must incorporate the POD for which the DFAST license is required) until the DFAST License Agreement has been modified to bring it within the allowable limits of the *Navigation Devices* rules. Some of the important issues we have identified include:

- The definition of "Unidirectional Digital Cable Products" should be modified to include devices that have two-way cable modem capabilities but are otherwise Compliant; Unidirectional Digital Cable Products should be entitled to certification as long as they are Compliant and not intentionally designed to facilitate theft of service or circumvent security of service or content.

- The proposed Copying, Recording and Storage Rules should be viewed as a minimum baseline that should be broadened to accommodate DRM-based content protection systems and their more flexible usage rights and business models.

- The Compliance Rules should be modified to accommodate the broader array of digital outputs over which appropriately encrypted content subject to DRM can be transported securely; the objective criteria for approving new technologies should be stated with greater specificity so that innovators know what standards they need to meet *before* they develop new technologies.

- The Robustness Rules should be modified to accommodate PCs and other open-architecture devices.

These are just a few examples; this is not intended to be a comprehensive list. We will continue to work with the cable, consumer electronics and media industries to identify the most critical areas in which the DFAST License Agreement should be modified to avoid excessively limiting the opportunities for PCs and other open-architecture devices to participate in the market for Digital Cable Ready devices. We will provide the Commission with an updated, more comprehensive list documenting the concerns raised in these discussions shortly.

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For the foregoing reasons, we ask the Commission to consider and adopt the recommended modifications (or, with respect to the DFAST License Agreement, to require CableLabs to make suitable modifications) to the *Plug-and-Play Proposal* to ensure that PCs and PC-based technologies are not excluded from the nascent market for digital cable devices and products. Taking such action will encourage investment in diverse technologies and spur the

digital transition by affording consumers access to both high value content and to the technological innovations that will allow them to maximize enjoyment of that content.

Respectfully submitted,

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S/ David Isaacs
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Attachments

cc: Chairman Michael K. Powell
Commissioner Kathleen Q. Abernathy
Commissioner Michael J. Copps
Commissioner Kevin J. Martin
Commissioner Jonathan S. Adelstein
Mr. Paul Gallant
Ms. Stacy Robinson
Mr. Jordan Goldstein
Mr. Daniel Gonzalez
Ms. Catherine Crutcher Bohigian
Ms. Johanna Mikes
Mr. Steve Broeckaert
Mr. Rick Chessen
Mr. Patrick Donovan
Ms. Alison Greenwald
Mr. William Johnson
Mr. Mike Lance
Mr. Jonathan Levy
Ms. Jane Mago
Ms. Maureen McLaughlin
Ms. Susan Mort
Ms. Mary Beth Murphy
Mr. Mike Perko
Mr. Alan Stillwell

APPENDIX A

APPENDIX A

Recommended Regulations to Ensure Compatibility Between Digital Cable Systems and Unidirectional Digital Cable Products and to Provide for Appropriate Labeling of Such Products.

(Proposed revisions of Microsoft Corp. and Hewlett-Packard Corp.)

Subpart ___ -- Compatibility Between Digital Cable Systems and Unidirectional Digital Cable Products and Labeling.

§ __.___ Support for Plug and Play Operation of Unidirectional Digital Cable Products On Digital Cable Systems.

(a) The requirements of this section shall apply to digital cable systems.

(b) No later than July 1, 2004, cable operators shall support Unidirectional Digital Cable Products, through the provisioning of PODs and services, as follows:

(1) Digital cable systems with an activated channel capacity of 750 MHz or greater shall comply with:

(i) SCTE 40 2001, as amended by DVS/535 (as of 10/29/02), provided however that with respect to Table B.11, the Phase Noise requirement shall be -86 dB/Hz, and also provided that the "transit delay for most distant customer" requirement in Table B.3 is not mandatory.

(ii) ANSI/SCTE 65 2002 (as of 10/29/02), provided however that the referenced Source Name Subtable shall be provided for Profiles 1, 2, and 3.

(iii) ANSI/SCTE 54 2002, as amended by DVS/435r4 (as of 10/29/02).

(iv) Without limiting the above requirements, cable operators shall also implement the terms of the Feb. 2000 NCTA/CEA PSIP agreement, attached as Appendix A.

(2) All digital cable systems shall comply with:

(i) ANSI/SCTE 28 2001, as amended by DVS/519r2 (as of 11/5/02).

(ii) ANSI/SCTE 41 2001, as amended by DVS/301r4 (as of 10/29/02).

(3) Cable operators shall ensure, as to all digital cable systems, an adequate supply of PODs that comply with the standards specified in Section (b)(2) to ensure convenient access to such PODs by customers. Without limiting the foregoing, cable operators may provide more advanced PODs (i.e., PODs that are based on successor standards to those specified in Section (b)(2)) to customers whose Unidirectional Digital Cable Products are compatible with the more advanced PODs.

(4) Cable Operators shall:

(i) Effective December 31, 2003, upon request of a customer, replace any leased high definition set-top box, which does not include a functional IEEE 1394 interface, with one that includes a functional IEEE 1394 interface or upgrade the customer's set-top box by download or other means to ensure that the IEEE 1394 interface is functional.

(ii) Effective July 1, 2005, include both a DVI or HDMI interface and an IEEE 1394 interface on all high definition set-top boxes acquired by a cable operator for distribution to customers.

(iii) Ensure that theses cable operator-provided High Definition Set-Top Boxes shall comply with ANSI/SCTE 26 2001 (as of 10/29/02) with transmission of bit-mapped graphics (EIA-799) optional, and shall support the CEA-931-A PASS THROUGH control commands: tune function, mute function, and restore volume function. In addition these boxes shall support the POWER control commands (power on, power off and status inquiry) defined in A/VA Digital Interface Command Set General Specification Version 4.0 (as referenced in ANSI/SCTE 26 2001).

(5) The Commission shall review the standards in this Section on a biennial basis to determine whether any of the regulations adopted herein shall sunset and/or be amended in light of changes in technology or other public interest factors.

§ __.___ Unidirectional Digital Cable Products.

(a) The requirements of this section shall apply to Unidirectional Digital Cable Products. "Unidirectional Digital Cable Products" are ~~one-way~~ navigation devices (as defined in Section 76.1200(c)), including but not limited to televisions, set-top boxes, personal computers and recording devices, capable of receiving one-way cable services delivered over ~~which include, but are not limited to televisions, set-top boxes and recording devices, connected to~~ digital cable systems. The term Unidirectional Digital Cable Product does not include navigation devices capable of using the return path to the cable headend for specific signaling enabling access to two-way cable services such as video-on-demand and impulse pay-per-view;

provided, however, that an otherwise compliant one-way device is not excluded merely because it (1) incorporates a cable modem and utilizes the cable "return path" to access cable modem services or (2) otherwise incorporates Internet connectivity.

(b) A Unidirectional Digital Cable Compatible Television may not be labeled or marketed as "XXX" [XXX="Digital Cable Compatible" or an alternative term to be defined jointly at a later date~~)~~] or otherwise marketed as defined below, unless it implements at a minimum the following features. Use of a label to mark the product physically is voluntary. For purposes of this section, "marketed" means using the descriptive terms specified in these rules, or using terminology that describes the device as "cable ready" or "cable compatible," marketing or otherwise indicating the device accepts a POD or that otherwise conveys the impression that the device is compatible with digital cable service.

(1) Tunes NTSC analog channels that are transmitted in-the-clear.

(2) Tunes digital channels that are transmitted in compliance with SCTE 40 2001 as amended by DVS/535 (as of 10/29/02), provided, however, that with respect to Table B.11, the phase noise requirement shall be -86 dB/Hz including both in-the-clear channels and channels that are subject to conditional access.

(3) May navigate channels based on (i) channel information (virtual channel map and source names) provided through the cable system in compliance with ANSI/SCTE 65 2002 (as of 10/29/02) and/or (ii) PSIP-enabled navigation (SCTE 54 2002 as amended by DVS 435r4 (as of 10/29/02).

(4) Includes the POD-Host Interface specified in SCTE 28 2001 as amended by DVS/519r2 (as of 11/5/02) and SCTE 41 2001 as amended by DVS/301r4 (as of 10/29/02) or implementation of a more advanced POD-Host Interface based on successor standards. Support for IP flows is not required.

(5) Responds to Emergency Alerts that are transmitted in compliance with ANSI/SCTE 54 2002, as amended by DVS/435r4 (as of 10/29/02).

(c) In addition to the above requirements, a Unidirectional Digital Cable Compatible Television may not be labeled or marketed either as ["XXX" or "XXX plus YYY"] or otherwise marketed as defined above, unless it employs specified interfaces at a minimum in accordance with the following schedule, provided however that there is no such obligation to incorporate the specified interfaces until there is federal regulation or enactment of federal law adopting encoding rules and prohibiting selectable output controls.

(1) For 480p grade Unidirectional Digital Cable Compatible Televisions – as follows (either DVI/HDCP or HDMI/HDCP interfaces, or 480p Y,Pb,Pr interfaces):

(i) With screen sizes 36 inches and above – 50% of a manufacturer's models offered for sale effective July 1, 2004; 100% of such models effective July 1, 2005.

(ii) With screen sizes 32 to 35 inches – 50% of a manufacturer's models offered for sale effective July 1, 2005; 100% of such models effective July 1, 2006.

(2) For 720p/1080i (HD) grade Unidirectional Digital Cable Compatible Televisions – as follows (either DVI/HDCP or HDMI/HDCP interfaces):

(i) With screen sizes 36 inches and above – 50% of a manufacturer's models offered for sale effective July 1, 2004; 100% of such models effective July 1, 2005.

(ii) With screen sizes 25 to 35 inches – 50% of a manufacturer's models offered for sale effective July 1, 2005; 100% of such models effective July 1, 2006.

(iii) With screen sizes 13 to 24 inches – 100% of a manufacturer's models offered for sale effective July 1, 2007.

(3) For purposes of this section, screen sizes are to be measured diagonally across the picture viewing area. These screen sizes are stated in the dimensions applied to screen sizes with a traditional 4:3 aspect ratio. When applied to different aspect ratios, the applicable screen size is determined by the vertical measurement. For example, the requirements for a 13" screen size with a 4:3 aspect ratio apply to a DTV receiver with a 7.8" vertical measurement and a 16:9 aspect ratio.

(d) Before a manufacturer's first Unidirectional Digital Cable Compatible Television may be labeled or marketed (as the term "marketed" is defined in subsection __(b) above) as ["XXX" or "XXX plus YYY,"] a manufacturer shall self-certify according to the following definitions and procedures.

(1) Definitions:

(i) Test Suite is a set of tests jointly developed and mutually agreed by CableLabs and CEA, and approved by the Federal Communications Commission, after public notice (which shall be issued within five (5) days after submission of the proposed Test Suite to the Commission) and an opportunity for all interested persons to comment, that can be directly attributed to an applicable normative requirement of one or more of the following standards: SCTE 28 2001 as amended by DVS/519r2 (as of 11/5/02), SCTE 41 2001 as amended by DVS/301r4 (as of 10/29/02), of SCTE 40 2001 as amended by DVS/535 (as of 10/29/02) or portions of EIA-818D and

DVS.538 (as of 10/29/02) that specifically address items (A) through (G) of the definition of Critical Test.

(ii) Critical Test is a test in the Test Suite that is essential to ensure the device under test (A) can tune and display (TV products) scrambled digital services via the POD conditional access system, (B) will not technically disrupt, impede or impair delivery of services to cable subscribers, (C) will not cause physical harm to the cable network or the POD, (D) is not intentionally designed to~~will not~~ facilitate theft of service or otherwise interfere with reasonable actions taken by Cable Operators to prevent theft of service, (E) is not intentionally designed to~~will not~~ jeopardize the security of any services offered over the cable system, (F) will not interfere with or disable the ability of a Cable Operator to communicate with or disable a POD Module or to disable services being delivered through a POD Module, or (G) is not intentionally designed to~~will not~~ impede or impair control of content protection. All other tests are called Non-critical Tests.

(iii) Harm Prevention Test is a test in the Test Suite that shall include appropriate portions of EIA-818D and DVS 538 (as of 10/29/02) that specifically address items (B) through (G) of the definition of Critical Test.

(iv) Self-Certification Documentation is an affirmative statement by the manufacturer that a Unidirectional Digital Cable ~~Television~~ Product model has been tested and has passed the Test Suite.

(v) First Prototype Test Suite Results are the passing results of all Critical Tests in the Test Suite and the results of all tests in the Test Suite for the manufacturer's first model of a Unidirectional Digital Cable Product~~Television~~.

(2) The manufacturer shall bring a prototype of its first model Unidirectional Digital Cable ~~Television~~ Product to any~~CableLabs or an appropriately qualified~~ third-party test facility or certification body accredited by the Federal Communications Commission or ANSI to execute the Test Suite. Manufacturer shall remedy all Critical Test failures and retest at ~~CableLabs or an appropriately qualified~~ third-party test facility or certification body accredited by the Federal Communications Commission or ANSI. Manufacturer may independently determine how to remedy Non-critical Test failures and may remedy them without retesting of the product at ~~CableLabs or an appropriately qualified~~ third-party test facility or certification body accredited by the Federal Communications Commission or ANSI. Manufacturers shall submit First Prototype Test Suite Results and Self-Certification Documentation to CableLabs.

(3) For models of a Unidirectional Digital Cable ~~Television~~ Product after the first model, manufacturer shall submit Self-Certification Documentation to CableLabs.

(4) If the manufacturer's first model Unidirectional Digital Cable Product is not a Television, or if the manufacturer's first model Unidirectional Digital Cable Products (whether or not it is a Television) is placed onto the market without being marketed (as the term "marketed" is defined at subsection ___(b) above) or labeled as "XXX" or "XXX plus YYY," the manufacturer shall bring a prototype of said model to ~~CableLabs or an~~ any~~n appropriately qualified~~ third-party test facility or certification body accredited by the Federal Communications Commission or ANSI to execute the Test Suite. Manufacturer shall remedy all Harm Prevention Test failures and retest at ~~CableLabs or an appropriately qualified~~ third-party test facility or certification body accredited by the Federal Communications Commission or ANSI. Manufacturer may independently determine how to remedy all other test failures and may remedy them without retesting of the product at ~~CableLabs or an appropriately qualified~~ third-party test facility or certification body accredited by the Federal Communications Commission or ANSI. Manufacturer shall submit Harm Prevention Test Results and Self-Certification Documentation to CableLabs.

(5) After delivering Self-Certification Documentation and First Prototype Test Suite Results for a first prototype Unidirectional Digital Cable ~~Television~~Product, manufacturers shall have no further requirement to test at CableLabs or third-party test facilities.

(6) Notwithstanding any of the foregoing, CableLabs shall serve solely as the repository for Self-Certification Documentation. CableLabs shall have no authority to approve, accept or reject Self-Certification Documentation. Any claim that a Unidirectional Digital Cable Product is not qualified to be marketed as ["XXX" or "XXX plus YYY"] shall be brought as a complaint before the Federal Communications Commission under subsection (b) or (c) above, and, absent an order from the Federal Communications Commission, CableLabs shall not withhold POD technology secrets or keys while such a complaint is pending.

(e) Manufacturers shall provide in appropriate post-sale material that describes the features and functionality of the product, such as the owner's guide, the following language, as applicable: "This [digital television] [digital cable product] is capable of receiving analog basic, digital basic and digital premium cable programming by direct connection to a cable system providing such programming. A security card provided by your cable operator is required to view encrypted digital programming. Certain advanced and interactive digital cable services such as video-on-demand, a cable operator's enhanced program guide and data-enhanced television services may require the use of a set-top box. For more information call your local cable operator."

(f) The Commission shall ~~will~~ review the standards in this Section on a biennial basis, in a notice-and-comment rulemaking proceeding, to determine whether any of the regulations adopted herein shall sunset and/or be amended in light of changes in technology and other public interest factors.

APPENDIX B

APPENDIX B

ENCODING RULES

As proposed to the FCC
(not effective until adopted by the FCC)
(Proposed revisions of Microsoft Corp. and Hewlett-Packard Corp.)

Cross Reference

§76.1211
Each multi-channel video programming distributor shall comply with the requirements of subpart W with respect to the services covered by that subpart.

Part 76, Subpart W

§76.1901 Applicability

(a) Each multi-channel video programming distributor shall comply with the requirements of this subpart W.
(b) These rules shall not apply to distribution of any content over the Internet, nor to a multi-channel video programming distributor's operations via cable modem or DSL.
(c) With respect to cable system operators, this subpart shall apply only to Cable Services. This subpart shall not apply to cable modem services, whether or not provided by a cable system operator or affiliate.

§76.1902 Definitions

"**Commercial Advertising Messages**" shall mean, with respect to any service, Program, or schedule or group of Programs, commercial advertising messages other than (a) advertising relating to such service itself or the programming contained therein, (b) interstitial programming relating to such service itself or the programming contained therein, or (c) any advertising which is displayed concurrently with the display of any part of such Program(s), including but not limited to "bugs," "frames" and "banners."

"**Commercial Audiovisual Content**" shall mean works that consist of a series of related images which are intrinsically intended to be shown by the use of machines, or devices such as projectors, viewers, or electronic equipment, together with accompanying sounds, if any, regardless of the nature of the material objects, such as films or tapes, in which the works are embodied, transmitted by a Covered Entity and that are (a) not created by the user of a Covered Product and (b) offered for transmission, either generally or on demand, to subscribers or purchasers or the public at large or otherwise for commercial purposes, not uniquely to an individual or a small, private group.

"**Commercially-Adopted Access Control Method**" shall mean any commercially-adopted access control method, such as CSS, Digicypher, Harmony, DBS and any other commercially-adopted access control technology, including digitally controlled analog scrambling systems, whether now or hereafter in commercial use.

"**Copy Never**" shall mean, with respect to Commercial Audiovisual Content, the Encoding of such content so as to signal that such content may not to be copied by a Covered Product.

"**Copy One Generation**" shall mean, with respect to Commercial Audiovisual Content, the Encoding of such content so as to permit a first generation of copies to be made by a Covered Product but not copies of such first generation of copies.

"**Copy No More**" shall mean, with respect to Commercial Audiovisual Content, the Encoding of such content so as to reflect that such content is a first generation copy of content Encoded as Copy One Generation and no further copies are permitted.

"**Covered Product**" shall mean a device used by consumers to access Commercial Audiovisual Content offered by a Covered Entity, other than ~~(excluding delivery~~ via cable modem or the Internet~~)~~, provided, however, that the capacity to access Commercial Audiovisual Content via cable modem or the Internet shall not disqualify a device from being a Covered Product with respect to Commercial Audiovisual Content received from a Covered Entity other than via cable modem or the Internet; and any device to which Commercial Audiovisual Content so delivered from such Covered Product may be passed, directly or indirectly.

"**Covered Entity**" shall mean any entity that is subject to this subpart W.

"**Defined Business Model**" shall mean Video-on-Demand, Pay-Per View, Pay Television Transmission, Subscription-on-Demand, Non-Premium Subscription Television, Free Conditional Access Delivery and Unencrypted Broadcast Television.

"**Encode**" shall mean, in the transmission of Commercial Audiovisual Content, to pass, attach, embed, or otherwise apply to, associate with, or allow to persist in or remain associated with such content, data or information which when read or responded to in a Covered Product~~Device~~ has the effect of preventing, pausing, or limiting copying or unauthorized display or distribution of such content, or of constraining the resolution of a Program when output from the Covered Product~~Device~~.

"**Encoding Rules**" shall mean the requirements or prohibitions describing or limiting Encoding of audiovisual content as set forth in this Rule.

"**Free Conditional Access Delivery**" shall mean a delivery of a service, Program, or schedule or group of Programs via a Commercially-Adopted Access Control Method, where viewers are not charged any fee (other than government-mandated fees) for the reception or viewing of the programming contained therein, other than Unencrypted Broadcast Television.

"**Non-Premium Subscription Television**" shall mean a service, or schedule or group of Programs (which may be offered for sale together with other services, or schedule or group of Programs), for which subscribers are charged a subscription fee for the reception or viewing of the programming contained therein, other than Pay Television, Subscription-on-Demand and Unencrypted Broadcast Television. By way of example, "basic cable service" and "extended basic cable service" (other than Unencrypted Broadcast Television) are "Non-Premium Subscription Television."

"**Pay-Per-View**" shall mean a delivery of a single Program or a specified group of Programs, as to which each such single Program is generally uninterrupted by Commercial Advertising Messages and for which recipients are charged a separate fee for each Program or specified group of Programs. The term "Pay-Per-View" shall also include delivery of a single Program as described above for which multiple start times are made available at time intervals which are less than the running time of such Program as a whole. If a given delivery qualifies both as Pay-Per-View and a Pay Television Transmission, then, for purposes of this Rule, such delivery shall be deemed Pay- Per-View rather than a Pay Television Transmission.

"**Pay Television Transmission**" shall mean a transmission of a service or schedule of Programs, as to which each individual Program is generally uninterrupted by Commercial Advertising Messages and for which service or schedule of Programs subscribing viewers are charged a periodic subscription fee, such as on a monthly basis, for the reception of such programming delivered by such service whether separately or together with other services or programming, during the specified viewing period covered by such fee. If a given delivery qualifies both as a Pay Television Transmission and Pay-Per-View, Video-on-Demand, or Subscription-on-Demand then, for purposes of this Rule, such delivery shall be deemed Pay-Per-View, Video-on-Demand or Subscription-on-Demand rather than a Pay Television Transmission.

"**Program**" shall mean any work of Commercial Audiovisual Content.

"**Subscription-on-Demand**" shall mean the delivery of a single Program or a specified group of Programs for which (i) a subscriber is able, at his or her discretion, to select the time for commencement of exhibition thereof; (ii) where each such single Program is generally uninterrupted by Commercial Advertising Messages; and (iii) for which Program or specified group of Programs subscribing viewers are charged a periodic subscription fee for the reception of programming delivered by such service during the specified viewing period covered by the fee. In the event a given delivery of a Program qualifies both as a Pay Television Transmission and Subscription-on-Demand, then for purposes of this Rule, such delivery shall be deemed Subscription-on- Demand rather than a Pay Television Transmission.

"**Undefined Business Model**" shall mean a business model that does not fall within the definition of a Defined Business Model.

"**Unencrypted Broadcast Television**" means any service, Program, or schedule or group of Programs, that is a further transmission of a broadcast transmission (i.e., an over-the-air transmission for reception by the general public using radio frequencies allocated for that purpose) that substantially simultaneously is made by a terrestrial television broadcast station located within the country or territory in which the entity further transmitting such broadcast transmission also is located, where such broadcast transmission is not subject to a Commercially-Adopted Access Control Method (e.g., is broadcast in the clear to members of the public receiving such broadcasts), regardless of whether such entity subjects such further transmission to an access control method.

"**Video-on-Demand**" shall mean a delivery of a single Program or a specified group of Programs for which (i) each such individual Program is generally uninterrupted by Commercial Advertising Messages; (ii) recipients are charged a separate fee for each such single Program or

specified group of Programs; and (iii) a recipient is able, at his or her discretion, to select the time for commencement of exhibition of such individual Program or specified group of Programs. In the event a delivery qualifies as both Video-on-Demand and a Pay Television Transmission, then for purposes of this Rule, such delivery shall be deemed Video-on-Demand.

§ 76.1903 Interface and Encoding Rules.

1. Rules As to Interfaces

A Covered Entity shall not attach or embed data or information with Commercial Audiovisual Content, or otherwise apply to, associate with, or allow such data to persist in or remain associated with such content, so as to prevent its output through any analog or digital output ~~authorized or permitted under license, law or regulation governing such Covered Product~~.

2. Encoding Rules for Defined Business Models

(a) Commercial Audiovisual Content delivered as Unencrypted Broadcast Television shall not be Encoded so as to prevent or limit copying thereof by Covered Products or to constrain the resolution of the image when output from a Covered Product.

(b) Except for (i) a specific determination made by the Commission pursuant to a petition with respect to a Defined Business Model other than Unencrypted Broadcast Television; or (ii) an Undefined Business Model subject to the procedures set forth in this Section:

(A) Commercial Audiovisual Content shall not be Encoded so as to prevent or limit copying thereof or to constrain the resolution of the image when output from a Covered Product except as follows:

(i) to prevent or limit copying or unauthorized display or distribution of Video-on-Demand, Pay-Per-View, or Subscription-on-Demand transmissions, subject to the requirements of subsection 2(B); and

(ii) to prevent or limit copying, other than first generation of copies, or otherwise to prevent or limit unauthorized display or distribution of Pay Television Transmissions, Non-Premium Subscription Television, and Free Conditional Access Delivery transmissions; and

(B) With respect to any Commercial Audiovisual Content delivered or transmitted in the form of a Video-on-Demand, Pay-Per-View or Subscription-on-Demand transmission, a Covered Entity shall not Encode such content so as to prevent a Covered Product, without further authorization, from pausing such content up to 90 minutes from initial transmission by the Covered Entity ("e.g., frame-by-frame, minute-by-minute, megabyte by megabyte, etc.). [Industry discussions are ongoing concerning how best to enable media companies to make their products available as they see fit without overriding the flexibility afforded by "pause" and similar consumer-friendly features now being incorporated in a wide variety of Covered Products.]

(c) The Commission may by petition determine whether it would be in the public interest to allow within a Defined Business Model the Encoding of a service other than in accordance with the Encoding Rule set forth in subsections 2(b)(A) and 2(b)(B) applicable to such Defined Business Model.

(i) Petition

The Encoding Rules for Defined Business Models reflect the conventional methods for packaging programs in the MVPD market as of December 31, 2002, and are presumed to be the appropriate rules for Defined Business Models. A Covered Entity may by petition request approval from the Commission for delivering Commercial Audiovisual Content, other than Unencrypted Broadcast Television, pursuant to a Defined Business Model other than as permitted by the Encoding Rules set forth in subsections 2(b)(A) and 2(b)(B). No such petition will be approved under the public interest test set forth below unless the service differs from services provided by any Covered Entity under the applicable Defined Business Model prior to December 31, 2002.

A petition to Encode a service within a Defined Business Model other than as permitted by the Encoding Rules set forth in subsections 2(b)(A) and 2(b)(B) shall describe:

(1) The Defined Business Model, the service, and the proposed Encoding terms, including the use of Copy Never and Copy One Generation Encoding, and the Encoding of content with respect to "pause" (subsection 2(b)(B)).

(2) The claimed benefit to consumers of the service, including, but not limited to, the availability of content in earlier release windows, more favorable terms, innovation or original programming;

(3) The ways in which the service differs from services offered by any Covered Entity within the applicable Defined Business Model prior to December 31, 2002;

(4) The effect on reasonable and customary expectations of consumers with respect to home recording;

(5) All other pertinent facts and considerations relied on to support a determination that grant of the Petition would serve the public interest.

Factual allegations shall be supported by affidavit or declaration of a person or persons with actual knowledge of the facts, and exhibits shall be verified by the person who prepares them.

(ii) Comment

The Commission shall give public notice of any such Petition.

Interested persons may submit comments or oppositions to the petition within thirty (30) days after the date of public notice of the filing of such petition. Comments or oppositions shall be served on the petitioner and on all persons listed in petitioner's certificate of service, and shall

contain a detailed full statement of any facts or considerations relied on. Factual allegations shall be supported by affidavit or declaration of a person or persons with actual knowledge of the facts, and exhibits shall be verified by the person who prepares them.

The petitioner may file a reply to the comments or oppositions within ten (10) days after their submission, which shall be served on all persons who have filed pleadings and shall also contain a detailed full showing, supported by affidavit or declaration, of any additional facts or considerations relied on. There shall be no further pleadings filed after petitioner's reply, unless authorized by the Commission.

(iii) Commission determination as to Encoding Rule for a new service within a Defined Business Model

(a) In an unrestricted proceeding, unless otherwise specified by the Commission, to determine whether Encoding other than in accordance with the Encoding Rule set forth in subsections 2(b)(A) and 2(b)(B) for the applicable Defined Business Model may be applied to a service within such Defined Business Model, the Covered Entity shall have the burden of proof to establish that the proposed change in Encoding is in the public interest. Within ninety (90) days after the Commission gives public notice of the filing of the original petition, the Commission shall determine whether a grant of the petition is in the public interest. In making such determination, the Commission shall take into account the following factors:

(1) The benefit to consumers of the new service, including but not limited to earlier release windows, more favorable terms, innovation or original programming;

(2) Ways in which the new service differs from services offered by any Covered Entity within the applicable Defined Business Model prior to December 31, 2002;

(3) Reasonable and customary expectations of consumers with respect to home recording

(b) The Commission may specify other procedures, such as oral argument, evidentiary hearing, or further written submissions directed to particular aspects, as it deems appropriate, but in no event shall such other procedures delay the process beyond the timeframe for Commission decision set forth in subsection 2(c)(iii).

(c) A petition may, upon request of the petitioner, be dismissed without prejudice as a matter of right prior to the adoption date of any final action taken by the Commission with respect to the petition. A petitioner's request for the return of a petition will be regarded as a request for dismissal.

(d) Complaint regarding a service not subject to petition.

In an instance in which a party entitled to be a Complainant has a substantial basis to believe and does believe in good faith that a service within a Defined Business Model has been launched without a petition as required by this Rule, such party may file a complaint pursuant to section 76.7 of the Commission's rules, and in appropriate circumstances the Commission shall rule upon the complaint within 90 days.

3. Encoding Rules for Undefined Business Models.

(a) Upon public notice and subject to requirements as set forth herein a Covered Entity may launch a program service pursuant to an Undefined Business Model. Subject to Commission review upon ~~c~~Complaint, the Covered Entity may initially Encode programs pursuant to such Undefined Business Model without regard to limitations set forth in subpart 76.1903(2).

(1) Notice

Concurrent with the launch of an Undefined Business Model by a Covered Entity, the Covered Entity shall issue a press release to the PR Newswire so as to provide public notice of the Undefined Business Model, and the proposed Encoding terms. The notice shall provide a concise summary of the Commercial Audiovisual Content to be provided pursuant to the Undefined Business Model, and of the terms on which such content is to be available to consumers. Immediately upon request from a party entitled to be a Complainant, the Covered Entity shall make available information that indicates the proposed Encoding terms, including the use of Copy Never or Copy One Generation Encoding, and the Encoding of content with respect to "pause" (subsection 2(b)(B)).

(2) Complaint Process

A manufacturer of a Covered Product, a manufacturer for whom the product was manufactured, or a Covered Entity ("Complainant") may file a complaint with the Commission objecting to application of Encoding as set forth in the notice.

(a) Pre-complaint resolution

Prior to initiating a complaint with the Commission under this subsection 3, the Complainant shall notify the Covered Entity that it may file a complaint under this section. The notice must be sufficiently detailed so that the Covered Entity can determine the specific nature of the potential complaint. The potential Complainant must allow a minimum of thirty (30) days from such notice before filing such complaint with the Commission. During this period the parties shall endeavor in good faith to resolve the issue(s) in dispute. If the parties fail to reach agreement within this 30 day period, Complainant may initiate a complaint in accordance with the procedures set forth herein.

(b) Complaint

Within two years of publication of a notice under 3(a)(1), a Complainant may file a complaint with the Commission objecting to application of the Encoding terms to the service at issue. Such complaint shall state with particularity the basis for objection to the Encoding terms.

(i) The complaint shall contain the name and address of the complainant and the name and address of the Covered Entity.

(ii) The complaint shall be accompanied by a certification of service on the named Covered Entity launching the Undefined Business Model.

(iii) The complaint shall set forth with specificity all information and argument relied upon. Specific factual allegations shall be supported by a declaration of a person or persons with actual knowledge of the facts, and exhibits shall be verified by the person who prepares them.

(iv) The complaint shall set forth attempts made by the Complainant to resolve its complaint pursuant to subsection (a).

The Commission shall give public notice of the filing of the complaint. Once the Commission has issued such public notice, any person otherwise entitled to be a Complainant shall instead have the status of a person submitting comments under subsection (c) rather than a Complainant.

(c) Comments and Reply

Any person may submit comments regarding the complaint within thirty (30) days after the date of public notice by the Commission. Comments shall be served on the Complainant and the Covered Entity and on any persons listed in relevant certificates of service, and shall contain a detailed full statement of any facts or considerations relied on. Specific factual allegations shall be supported by a declaration of a person or persons with actual knowledge of the facts, and exhibits shall be verified by the person who prepares them.

The Covered Entity may file a Response to the Complaint and comments within twenty (20) days after the date that comments are due. Such Response shall be served on all persons who have filed complaints or comments and shall also contain a detailed full showing, supported by affidavit or declaration, of any additional facts or considerations relied on. Replies shall be due ten (10) days from the date for filing a Response.

There shall be no further pleadings filed, unless authorized by the Commission.

(3) Commission determination as to encoding terms for an Undefined Business Model

In an unrestricted proceeding, unless otherwise specified by the Commission, to determine whether Encoding terms as noticed may be applied to an Undefined Business Model, the Covered Entity shall have the burden of proof to establish that application of the Encoding terms in the Undefined Business Model is in the public interest. In making any such determination, the Commission shall take into account the following factors:

(i) The benefit to consumers of the ~~new~~ service and/or the Undefined Business Model, including but not limited to ease of access or use, earlier release windows, more favorable terms, innovation or original programming;

(ii) Ways in which the ~~new~~ service differs from services or the Undefined Business Model differs from Defined Business Models offered by any Covered Entity prior to December 31, 2002;

(iii) Reasonable and customary expectations of consumers with respect to home recording.

(4) Determination

(A) Within ninety (90) days of the Commission's public notice of the complaint, the Commission shall determine whether to approve the Encoding terms as noticed.

(B) The Commission may specify other procedures, such as oral argument, evidentiary hearing, or further written submissions directed to particular aspects, as it deems appropriate, but in no event shall such other procedures delay the process beyond the timeframe for Commission decision set forth herein.

(b) Complaint re a service not subject to notice.

In an instance in which a party entitled to be a Complainant has a substantial basis to believe and believes in good faith that a service pursuant to an Undefined Business Model has been launched without requisite notice, such party may file a complaint pursuant to section 76.7 of the Commission's rules, and in appropriate circumstances the Commission shall rule upon the complaint within 90 days.

4. Temporary Bona Fide Trials. The obligations and procedures as to Encoding Rules set forth in 2(b) and (c) and 3(a) and (b) do not apply in the case of a temporary bona fide trial of a service.

5. Certain Practices Not Prohibited. Nothing in this Rule shall be construed as prohibiting a Covered Entity from:

(a) encoding, storing or managing Commercial Audiovisual Content within its distribution system or within a Covered Product under the control of a Covered Entity's Commercially-Adopted Access Control Method, provided that the outcome for the consumer from the application of the Encoding Rules set out in sections 2(a) and (b) is unchanged thereby when such Commercial Audiovisual Content is released to consumer control, or

~~(b)~~causing, with respect to a specific Covered Product, the output of content from such product in a format as necessary to match the display format of another device connected to such product, including but not limited to providing for content conversion between widely-used formats for the transport, processing and display of audiovisual signals or data, including but not limited to~~such as~~ between analog and digital formats and between PAL and NTSC or RGB and Y,Pb,Pr.

APPENDIX C

APPENDIX C

Sample XML-Based Usage Rights For A Digital Rights Management (DRM) System

Property	Description
AllowBackupRestore	Specifies and retrieves a Boolean value that indicates whether the license permits backup and restoration.
AllowBurnToCD	Specifies and retrieves a Boolean value that indicates whether the license permits content to be copied to a CD in the RedBook Audio format.
AllowPlayOnPC	Specifies and retrieves a Boolean value that indicates whether the license permits content to be played on a client computer.
AllowTransferToNonSDMI	Specifies and retrieves a Boolean value that indicates whether the license permits content to be transferred to non-SDMI-compliant portable devices or portable media.
AllowTransferToSDMI	Specifies and retrieves a Boolean value that indicates whether the license permits content to be transferred to SDMI-compliant portable devices or portable media.
BeginDate	Specifies and retrieves the date before which the license is not valid.
BurnToCDCount	Specifies and retrieves the number of times that content can be copied to a CD.
DeleteOnClockRollback	Specifies and retrieves a Boolean value that indicates whether a license must be deleted if the clock is set to an earlier time.
DisableOnClockRollback	Specifies and retrieves a Boolean value that indicates whether a license must be disabled if the clock is set to an earlier time.
ExpirationDate	Specifies and retrieves the date after which the license is no longer valid.
MinimumAppSecurity	Specifies and retrieves the minimum security level that a player must have to manipulate the content.
Playcount	Specifies and retrieves the number of times the license permits content to be played.
PMAppSecurity	Specifies and retrieves the security level for content that is being transferred to portable devices or portable media.
PMExpirationDate	Specifies and retrieves the expiration date for a media license.
PMRights	Specifies and retrieves the rights that govern content use with a portable license.
TransferCount	Specifies and retrieves the number of times the content can be transferred to portable devices or portable media.